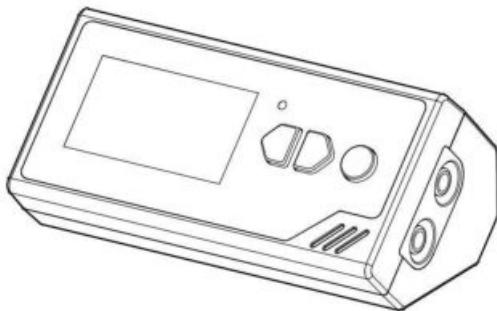


# SMART DIGITAL MULTIMETER

## OPERATOR'S INSTRUCTION MANUAL



### **WARNING**

***READ AND UNDERSTAND THIS MANUAL  
BEFORE USING THE INSTRUMENT***

Failure to understand and comply with the WARNING and operating instructions can result in serious or fatal injuries or property damage.

*Before using the product, please read this manual and follow the instructions for use to avoid reducing or nullifying the function of the product.*

## **OVERVIEW**

This multimeter is a 6000COUNTS true RMS smart digital multimeter. The meter is easy to carry, stable performance, high accuracy, clear readings, easy to operate. It can be used without turning the dial. The meter will display the content by automatically recognizing the measuring object. Users can also choose to use function buttons to switch functions such as capacitance measurement, diode, continuity test, temperature measurement according to the usage situation.

## **SAFETY INFORMATION**

The instruments have been designed to comply with IEC 1010-1 (safety standard issued by the International Electrotechnical Commission), strictly adhering to the safety standards of double insulation DC 600V CATIII and pollution class 2.

## **PRECAUTION**

1. Before using the meter, please check the casing for cracks or defective plastic parts, please check the meter pen carefully for cracks, please do not continue to use it if it is damaged or the meter is not operating normally;
2. When measuring voltage, please do not input voltage exceeding the limit of 600V DC or 600V AC RMS.  
Disconnect the meter from the body to be measured first, and check whether the meter pens are connected correctly and whether the

insulation is in good condition, so as to avoid being shocked by electricity;

3. Voltages below 36V are safe voltages, please do not touch the charged objects directly;

4. When changing functions and ranges, the meter pen should leave the measured object.

## PRODUCT FEATURES

Display mode: Liquid Crystal Display;

Maximum display: 5999 (5 5/6) auto-polarity display;

Sampling rate: 3 times per second;

Over-range display: [ **OL** ];






Working condition: (0 – 40)°C, relative humidity < 80%;

Power supply: 3.7V 200mAh lithium-ion battery;

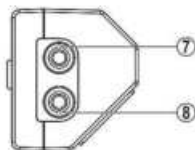
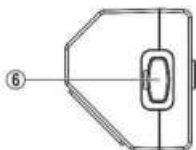
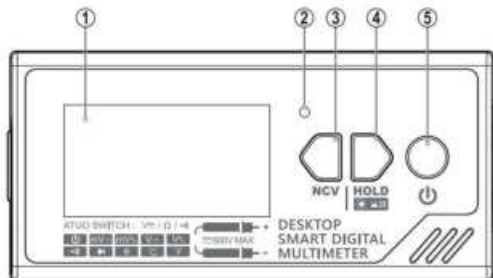
Dimensions: 96 × 45 × 42mm;

Accessories: manual, test leads, thermocouples, packing box.

## SYMBOL





	Grounding symbol
	Double insulation (Class II)
<b>CAT II</b>	Overvoltage category II
	Electric shock hazard
	Safety instructions, the operator must refer to the instruction manual
	Battery Low Voltage
<b>T-RMS</b>	True rms value
<b>AUTO</b>	Auto scan mode
<b>APO</b>	Auto power off

## APPEARANCE



- |                       |   |
|-----------------------|---|
| ① LCD display         | ⑤ Power/function switch button          |
| ② LED indicator light | ⑥ type-C USB charging port              |
| ③ Function button 1   | ⑦ $\Omega V \frac{1}{2}$ Test lead jack |
| ④ Function button 2   | ⑧ COM Test lead jack                    |

## FUNCTION BUTTONS

 <b>NCV</b>	<p><b>Function button 1</b> [Press] Enter the NCV function / Return to the auto scan mode;</p>
 <b>HOLD</b> 	<p><b>Function button 2</b> [Press] Lock the measurement value; [Press and hold for 2 seconds] Turn on/off the screen backlight.</p>
	<p>[Press and hold for 2 seconds] Turn the meter on/off. AUTO function can automatically detect voltage / resistance / continuity test; [Press] Switch from auto scan mode to: DC millivolts / AC millivolts / DC voltage / AC voltage / Continuity test / Diode / Capacitance / Temperature °C / °F.</p>

## TECHNICAL CHARACTERISTICS


Accuracy:  $\pm(a\%$  of reading + least significant digit), guaranteed accuracy Ambient temperature:  $(23\pm5)^{\circ}\text{C}$ , relative humidity  $<75\%$ , calibration guarantee period is one year from the date of delivery.

## TECHNICAL SPECIFICATIONS

### DC/AC VOLTAGE (DCV / ACV)

RANGE	ACCURACY	RESOLUTION
600mV	$\pm(0.5\%+3)$	0.1mV
6V		0.001V
60V		0.01V
600V		0.1V

### INSTRUCTIONS (DC/AC Voltage)

1. Press and hold the [  ] button for about 2 seconds to turn on the meter, and the screen will display "AUTO";
2. Insert the red test lead into the " + " jack, insert the black test lead into the " - " jack. The red test lead and the black test lead come into contact with the object being measured. The LCD displays the measurement value;
3. When the voltage measured between the input port "COM" and "V/ $\Omega$ " is greater than 0.6V, Regardless of AC voltage or DC voltage, the meter will compare based on the magnitude of the DC component and AC component. Take the larger component signal, automatically switch between 6V/60V/600V according to the size of the measured value, and then display the measured value on the LCD; Depending on the input voltage, the instrument screen displays the "AC V" or "DC V" symbol.

### Precautions:

- (1) The input voltage must not exceed DC600V or AC600V. If it exceeds, there is a risk of damaging the instrument circuit; when using high-voltage circuits, special attention must be paid to avoid electric shock.



(2) After completing all measurement operations, disconnect the test leads from the circuit under test.

(3) When the voltage is higher than 0.6V, it changes to the voltage range and automatically recognizes AC/DC. If it has jumped to the voltage range, when it is lower than 0.6V, it returns to AUTO.

Input impedance: 10M $\Omega$

Overload protection: 600V DC or 600V AC peak value.

## INSTRUCTIONS (DC/AC Millivolts)

1. Press and hold the [  ] button for about 2 seconds to turn on the meter, and the screen will display "AUTO". Press the [  ] button to switch function, and select AC or DC according to your needs. When the LCD displays the "mV" symbol, it enters the millivolts measurement function;
2. Insert the red test lead into the "+" jack, insert the black test lead into the "-" jack. The red test lead and the black test lead come into contact with the object being measured. The LCD displays the measurement value;


## Precautions:

In the millivolt range, the over-range symbol [ OL ] will be displayed when the voltage exceeds 600mV.

## Resistance ( $\Omega$ )

RANGE	ACCURACY	RESOLUTION
6k $\Omega$	$\pm(1.2\%+3)$	1 $\Omega$
60k $\Omega$		10 $\Omega$
600k $\Omega$		100 $\Omega$
6M $\Omega$		1k $\Omega$
60M $\Omega$	$\pm(2.5\%+3)$	10k $\Omega$

## INSTRUCTIONS

1. Press and hold the [  ] button for about 2 seconds to turn on the meter, the screen will display " AUTO ";
2. Insert the black test lead into the " - " jack, insert the red test lead into the " + " jack, the red test lead and the black test lead touch the test point, and the meter screen displays the measured value;
3. If the measured resistance at both ends of the test lead is less than  $50\Omega$ , the buzzer will make a continuous sound; When the measured object is a closed loop resistance, the resistance at both ends of the measured resistance must be discharged, otherwise, if the voltage in the loop is greater than  $0.6V$ , the meter will mistakenly regard it as a voltage measurement and enter the voltage measurement mode;
4. The meter will automatically switch between  $600\Omega\sim 60M\Omega$  according to the resistance measurement value, and then display the measured value on the LCD.

### Precautions:



- (1) When measuring low resistance, the test leads will bring internal resistance. In order to obtain accurate readings, you can first record the short-circuit value of the test leads, and subtract the value when the test leads are short-circuited from the measurement readings;
- (2) When measuring online resistance, all power supplies of the circuit under test must be turned off and all capacitors must be fully discharged to ensure the correctness of the measured value.



## CAPACITANCE ( F )

RANGE	ACCURACY	RESOLUTION
100nF	$\pm(3.5\%+20)$	0.1nF
1uF		1nF
10uF		10nF
100uF		100nF
1mF - 2mF		1uF

## INSTRUCTIONS

1. Press and hold the [  ] button for about 2 seconds to turn on the meter, the screen will display " AUTO ", Press the [  ] button to switch functions, and when the instrument screen displays the " F " symbol, it enters the capacitance measurement function;
2. Insert the black test lead into the " - " jack, insert the red test lead into the " + " jack, the red test lead and the black test lead touch the test point, and the meter screen displays the measured value;
3. When measuring capacitance, the capacitance of the measured capacitance will automatically select different ranges, and the measured value will be displayed on the LCD. According to the capacitance, the measurement time will also be different. The larger the capacitance, the longer the stable reading time of the meter;

## Precautions:

- (1) When measuring severe leakage or breakdown capacitance in the large capacitance range, some values will be displayed and are unstable; when measuring large capacitance, it takes a few seconds for the reading to stabilize, which is normal when measuring large capacitance;



(2) Please fully discharge the capacitor before testing the capacitance, otherwise it will enter the voltage measurement mode.

(3) Unit:




1F = 1000mF    1mF = 1000uF

1uF = 1000nF    1nF = 1000pF




## CONTINUITY TEST / DIODE TEST

RANGE	DISPLAY VALUE	TEST CONDITIONS
	Diode forward step-down	Open circuit voltage about 3.2V
	The buzzer beeps for a long time, and the resistance value of the test object is less than $(50 \pm 20) \Omega$	On-off voltage is about 1.723V

### INSTRUCTIONS (continuity test)

1. Press and hold the [  ] button for about 2 seconds to turn on the meter, the screen will display " AUTO ", press the [  ] button to switch function, and when the screen displays the symbol "  ", it was entered the continuity test function;
2. Insert the black test lead into the " - " jack, insert the red test lead into the " + " jack, the red test lead and the black test lead touch the test point. If there is continuity between the two ends of the test point, the buzzer will make a continuous sound.

## INSTRUCTIONS (Diode test)

1. Press and hold the [  ] button for about 2 seconds to turn on the meter, the screen will display "AUTO", press the [  ] button to switch function, and when the screen displays the symbol "  ", it was entered the diode test function;
2. Insert the black test lead into the " - " jack, insert the red test lead into the " + " jack, the red test lead and the black test lead touch the test point, The red test lead is connected to the positive pole of the diode, and black test lead is connected to the negative pole. The screen will display the forward voltage value of the diode. The display unit is " V ".

## NON-CONTACT VOLTAGE DETECTION (NCV)

### INSTRUCTIONS

1. Press and hold the [     ] button for about 2 seconds to turn on the meter, the screen will display "AUTO", press the [ **NCV** ] button, and when the " EF " is displayed on the screen, it will enter the NCV function;
2. Put the pen tip of the meter close to the measured object for induction detection, and the buzzer will emit different continuous sounds according to the different strengths of the signal.




### Precautions:

When the range is switched to NCV, please pull out the test leads to avoid electric shock.

## TEMPERATURE(°C°F)

RANGE	ACCURACY	RESOLUTION
-40°C - 1000°C	$\pm(1.0\%+4)$	1°C
-40°F - 1832°F	$\pm(1.2\%+6)$	1°F

## INSTRUCTIONS

1. Press and hold the [  ] button for about 2 seconds to turn on the meter, the screen will display " AUTO ",press the [  ] button to switch function, and when the screen displays the " °C " symbol, it was entered the diode test function.Touch the [  ] button again to enter the temperature (Fahrenheit) measurement range;
2. Insert the red end of the thermocouple into the "VΩ" jack and the black end into the "COM" jack;place the test end of the thermocouple in the test environment. After the reading is stable, the display reads the temperature of the test environment.


## Precautions:

- Overload protection: 600V DC or 600V AC peak.
- The thermocouple matched with the instrument can withstand a maximum temperature of 250°C/482°F.

## DATA HOLD

When the meter is reading, press the [ **HOLD** ] key to turn on/off the value locked.

## SCREEN BACKLIGHT


Press and hold the [  ] button for about 2 seconds to turn on the screen backlight.

## AUTO POWER OFF

The meter will shut down automatically if there is no operation within 15 minutes after powering on.

## Charge the meter

The rechargeable type of the meter is powered by a rechargeable battery and the meter uses a type-C USB charging port.

If the [  ] symbol appears on the meter screen, it means the meter's battery is low, to avoid incorrect readings, please charge the meter in time.

- Open the charging port cover on the side of the meter, insert the type-C USB charging cable and connect the other end of the charging cable to the charger. This meter does not support fast charging, please do not use a high power charger (charging power greater than 18W) to charge the meter.
- In the charging status, the LED light of the instrument displays a red light and a green light when charging is completed.

Precautions:

- Do not use the meter while charging.
- If the meter is not used for a long time, please charge it regularly to prevent the battery from being unusable due to being left for a long time.

## Meter Maintenance

- Do not disassemble the instrument case or repair the instrument without understanding its structure, and leave it to a professional.
- Before disassembling, make sure that the power is off, and remove the meter pens from the meter.
- To avoid electric shock injuries caused by incorrect meter readings, when the meter displays the low-voltage status symbol, please replace the battery or charge it in time.
- Wipe the meter with a damp towel or cleaner, do not use solvents/abrasives on the meter.
- When the meter is not in use for a long time, please check the battery condition regularly to avoid battery leakage or rechargeable battery failure.

- \* *This manual is subject to change without notice;*
- \* *The content of this manual is believed to be correct. If the user finds any errors, omissions, etc., please contact the manufacturer;*
- \* *The company is not responsible for accidents and hazards caused by user error;*
- \* *The functions described in this manual are not a reason to use the product for special purposes.*